REMARKS

Applicant concurrently files herewith a petition and fee for a two-month extension of time pursuant to 37 CFR 1.136(a). The present amendment is prepared in accordance with the requirements of 37 CFR 1.121.

Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the personal interview among U.S. Patent Examiner Dang D. Le, one of the Inventors Philip Corbin III and the undersigned Counsel Steven J. Miller, Esq. conducted on November 29, 2005, the amendments above and the remarks below.

Claims 1 through 30, incl., have been amended, to clarify that which the applicant regards as the invention.

No new matter has been added.

CLAIM REJECTIONS – 35 USC §112

The Examiner has rejected claims 15 and 30 UNDER 35 USC 112, as failing to make clear what "the electro conductive materials' electric circuit" is. As discussed in the aforementioned personal interview with the Patent Examiner Dang D. Le on November 29, 2005, the applicant has decided to cancel said claims. In order to avoid confusion on these two dependent claims (15 and 30), and without disclaiming any part of the invention, the applicant has decided to cancel these two aforesaid dependent claims.

These aforementioned changes to the claims and specification have addressed the

Examiner's above listed 35 USC 112 rejections of Claims 15 and 30.

CLAIM REJECTIONS – 35 USC §102(b)

The Examiner has rejected Claims 1 and 16 under 35 USC 102(b), as the Examiner indicates that said claims are anticipated by LAFFEY (US 5,158,279) because allegedly, LAFFEY teaches to all elements in the applicants claimed invention. The applicant herein respectfully traverses the Examiner's position on this issue. As discussed in the aforementioned interview with the Examiner Dang D. Le on November 29, 2005, LAFFEY'S claim number 1 requires a "outer magnetic member" and "inner magnetic member" and therefore requires that **BOTH** rotary members or rotors, have permanent magnets on them. This is further illustrated in LAFFEY's Fig. 1, part # 18 (outer magnet) and part # 20 (inner magnet). The present invention does not have this required element or limitation. Therefore, since LAFFEY does not have each and every limitation or element to the subject claimed invention, LAFFEY does not anticipate the subject invention and therefore the subject invention is novel over LAFFEY. The present invention having permanent magnets on only one of the two rotating members or rotors is unique, was in the original application disclosure, and the specification and claims have been amended to clarify this issue.

These aforementioned changes to the specification and claims have addressed the Examiner's above cited 35 USC 102(b) comments as to the novelty of Claims 1 and 16, and the present invention is therefore not anticipated by LAFFEY.

The Examiner has further rejected Claims 1 and 16 under 35 USC 102(b), as the

Examiner indicates that said claims are anticipated by WOOD (US 2,437,871) because allegedly, WOOD teaches to all elements in the applicants claimed invention. The applicant herein respectfully traverses the Examiner's position on this issue. As discussed in the aforementioned interview with the Examiner Dang D. Le on November 29, 2005, WOOD"S claim number 1 "... permanent magnets of the bar type carried by **each** of said annular portions...", and therefore requires that **BOTH** rotary members or rotors, have permanent magnets on them. This is further illustrated in WOOD's Fig. 1, part # 17 (magnet on outer rotor #1) and part #18 (magnet on inner rotor #3). The present invention does not have this required element or limitation. Therefore, since WOOD does not have each and every limitation or element to the subject claimed invention, WOOD does not anticipate the subject invention and therefore the subject invention is novel over WOOD. The present invention having permanent magnets on only one of the two rotating rotors is unique, was in the original application disclosure, and the specification and claims have been amended to clarify this issue.

These aforementioned changes to the specification and claims have addressed the Examiner's above cited 35 USC 102(b) comments as to the novelty of Claims 1 and 16, and the present invention is therefore not anticipated by WOOD.

The Examiner has further ejected Claims 1, 3, 7, 12, 16, 18, 22, and 27 under 35 USC 102(b), as the Examiner indicates that said claims are anticipated by LEHDE (US 2,807,734) because allegedly, LEHDE teaches to all elements in the applicants claimed invention. The applicant herein respectfully traverses the Examiner's position on this issue. As discussed in the aforementioned interview with the Examiner Dang D. Le on November 29, 2005, LEHDE'S

claim number 1 requires a "...means attached to **one of the members** for producing a radial **magnetic field**, a ring of **permanent magnetic material connected to the other**..." and therefore requires that **BOTH** rotary members or rotors, have permanent magnets on them. This is further illustrated in LEHDE'S Fig. 1, part #14 ("...permanent magnet material...") and part #19 ("magnet"). The present invention does not have this required element or limitation. Therefore, since LEHDE does not have each and every limitation or element to the subject claimed invention, LEHDE does not anticipate the subject invention and therefore the subject invention is novel over LEHDE. The present invention having permanent magnets on only one of the two rotating rotors is unique, was in the original application disclosure, and the specification and claims have been amended to clarify this issue.

These aforementioned changes to the specification and claims have addressed the Examiner's above cited 35 USC 102(b) comments as to the novelty of Claims 1, 3, 7, 12, 16, 18, 22, and 27, and the present invention is therefore not anticipated by LEHDE.

CLAIM REJECTIONS – 35 USC §103(a)

The Examiner has rejected Claims 2, 10, 17 and 24, as being unpatentable over the combination of LEHDE and CRAMER (US 5,763,973) because the subject invention would have been obvious, when taking LEHDE and CRAMER in combination, to one skilled in the art. The applicant herein respectfully traverses the Examiner's position on this issue. As discussed in the aforementioned personal interview with the Examiner Dang D. Le on November 29, 2005, and as indicated the prior section above, current application is not anticipated by LEHDE, therefore, CRAMER in combination with LEHDE cannot be obvious to one skilled in the art.

Since LEHDE does not claim permanent magnets on both rotating members or rotors, and therefore does not anticipate the applicant's invention, then, necessarily, LEHDE, in combination with CRAMER, teaches away from the applicant's subject invention. Further, CRAMER claims a "barrier" (or liquid seal) for a magnetic coupling, and not a magnetic coupling itself, or 'magnetic torque transfer' device, as does the applicant's subject invention. In addition, CRAMER's coupling itself, like LEHDE, has magnets on both rotating members or rotors [see CRAMER'S Figure No. 2, Part No. 54 ("outer magnet assembly") and Part No. 56 ("permanent magnets")]. Since both LEHDE and CRAMER have required elements that the applicant's subject invention does not claim, and since CRAMER doesn't even claim a magnetic coupling device, but rather a "seal-less pump" or 'barrier", their combination necessarily teaches away from the current invention which teaches requires magnets on only one of the two rotating members or rotors. The applicant has, by amending the specification and claims herein, removed any rejections due to obviousness of the claimed invention to the LEHDE and CRAMER combination of prior art.

The Examiner has further rejected Claims 4, 6, 8, 19, 21 and 23, as being unpatentable over the combination of LEHDE and DELANCEY (US 2,230,717) because the subject invention would have been obvious, when taking LEHDE and DELANCEY in combination, to one skilled in the art. The applicant herein respectfully traverses the Examiner's position on this issue. As discussed in the aforementioned personal interview with the Examiner Dang D. Le on November 29, 2005, and as indicated the prior section above, current application is not anticipated by LEHDE, therefore, DELANCEY in combination with LEHDE cannot be obvious to one skilled

in the art. Further, DELANCEY is not claiming a 'magnetic torque transfer device', but is claiming a 'pumping means', with a required pump, motor combination (See DELANCEY claim #1). The applicant's subject invention does not claim such a combined 'pump/motor' or 'pumping means' device. Therefore, since both LEHDE and DELANCEY have required elements that the applicant's subject invention does not claim, the combination of LEHDE and DELANCEY necessarily teaches away from the current invention which teaches claims a 'magnetic torque transfer' device, and requires magnets on only one of the two rotating members or rotors. The applicant has, by amending the specification and claims herein, removed any rejections due to obviousness of the claimed invention to the LEHDE and DELANCEY combination of prior art.

The Examiner has further rejected Claims 5, 13, 20, 28, and 29, as being unpatentable over the combination of LEHDE and FIELDS (US 6,041,571) because the subject invention would have been obvious, when taking LEHDE and FIELDS in combination, to one skilled in the art. The applicant herein respectfully traverses the Examiner's position on this issue. As discussed in the aforementioned personal interview with the Examiner Dang D. Le on November 29, 2005, and as indicated the prior section above, current application is not anticipated by LEHDE, therefore, FIELDS in combination with LEHDE cannot be obvious to one skilled in the art. Further, FIELDS, like LEHDE, has magnets on both rotating members or rotors [see FIELDS' Figure No. 4, Part No. 28 (inner permanent magnet) and Part No. 36 (outer permanent magnet)]. This is further illustrated in FIELD's claim #1, which claims "...said permanent magnets comprise a **first group of permanent magnets...and a second group of permanent**

magnets...second group of permanent magnets is positioned concentrically within said first group of permanent magnets...there being an air gap between the two groups of magnets...". Since both LEHDE and FIELDS have required elements that magnets exist on both rotors, their combination necessarily teaches away from the current invention which teaches requires magnets on only one of the two rotating members or rotors. The applicant has, by amending the specification and claims herein, removed any rejections due to obviousness of the claimed invention to the LEHDE and FIELDS combination of prior art.

The Examiner has further rejected Claims 9 and 26, as being unpatentable over the combination of LEHDE and O'BRIEN (US 5,736,798) because the subject invention would have been obvious, when taking LEHDE and O'BRIEN in combination, to one skilled in the art. The applicant herein respectfully traverses the Examiner's position on this issue. As discussed in the aforementioned personal interview with the Examiner Dang D. Le on November 29, 2005, and as indicated the prior section above, current application is not anticipated by LEHDE, therefore, O'BRIEN in combination with LEHDE cannot be obvious to one skilled in the art. Further O'BRIEN is claiming a 'passive magnetic damper' and not a 'magnetic torque transfer device' that is claimed by the applicant's subject invention. In addition, O'BRIEN, has magnets on both members or elements or discs. [See O'BRIEN'S Fig. No. 6 and Fig. No. 2, Part No. 28 (lower magnet assembly permanent magnets) and Part No. 34 (upper magnet assembly permanent magnets)]. Since both LEHDE and O'BRIEN have required elements that the applicant's subject invention does not claim, their combination necessarily teaches away from the current invention which teaches requires magnets on only one of the two rotating members or rotors. The applicant

has, by amending the specification and claims herein, removed any rejections due to obviousness of the claimed invention to the LEHDE and O'BRIEN combination of prior art.

The Examiner has further rejected Claims 11 and 25, as being unpatentable over the combination of LEHDE and ROUNDS (US 6,084,322) because the subject invention would have been obvious, when taking LEHDE and ROUNDS in combination, to one skilled in the art. The applicant herein respectfully traverses the Examiner's position on this issue. As discussed in the aforementioned personal interview with the Examiner Dang D. Le on November 29, 2005, and as indicated the prior section above, current application is not anticipated by LEHDE, therefore, ROUNDS in combination with LEHDE cannot be obvious to one skilled in the art. Further, ROUNDS, like LEHDE, has magnets on both rotating members or rotors [see ROUNDS' Fig. No's. 1, 2 and 3, Part No. 10 ("driver magnet") and Part No. 11 ("train magnet")]. In addition, ROUNDS claim #1 recites "a train of driven **magnets** on a **first rotor**...driver **magnets** on a **second rotor**...", Since both LEHDE and ROUNDS have required elements that magnets exist on both rotors, their combination necessarily teaches away from the current invention which teaches requires magnets on only one of the two rotating members or rotors. The applicant has, by amending the specification and claims herein, removed any rejections due to obviousness of the claimed invention to the LEHDE and ROUNDS combination of prior art.

The Examiner has further rejected Claims 15 and 30, as being unpatentable over the combination of LEHDE, FIELDS and KRASNOW (US 3,083,311) because the subject invention would have been obvious, when taking LEHDE, FIELDS and KRASNOW in combination, to

one skilled in the art. The applicant herein respectfully traverses the Examiner's position on this issue. As discussed in the aforementioned personal interview with the Examiner Dang D. Le on November 29, 2005, and as indicated the prior section above, current application is not anticipated by LEHDE, therefore, FIELDS and KRASNOW in combination with LEHDE cannot be obvious to one skilled in the art. Further, KRASNOW, claims as its invention, a 'converter for high frequency fluorescent lighting' and not a 'magnetic torque transfer' device, as is claimed in the applicant's subject invention. KRASNOW is directed to the production of wave with high frequency harmonics for 'converters and circuits for high frequency fluorescent lighting'. The subject applicant's invention is not directed to such an invention, but rather the applicant's subject invention is directed to a 'magnetic torque transfer apparatus'. KRASNOW claims particular magnetic pole geometries for the single rotating member or rotor of a 'dynamo-electric machine'; i.e. KRASNOW does not claim two rotating members or rotors, with one rotor only having permanent magnets, Rather, KRASNOW claims only one rotor, with varying geometries, and the other element of the 'dynamo-electric machine' being a stationary member or stator [See KRASNOW claim #'s 1, 2, 3, 5 and 6 **"In a rotor for dynamo-electric machines..."]**. Since LEHDE, FIELDS and KRASNOW have required elements that the applicant's subject invention does not claim, their combination necessarily teaches away from the current invention which teaches requires magnets on only one of the two rotating members or rotors. The applicant has, by amending the specification and claims herein, removed any rejections due to obviousness of the claimed invention to the LEHDE, FIELDS and KRASNOW combination of prior art.

Further, as a clerical matter, in the claims and specification, all uses of the word "electroconductive" have been amended to be spelled as "electro-conductive" to be consistent

with all spellings of this particular term in all sections of the specification.

IV. CONCLUSION

Attached hereto is a marked-up version of the changes made to the specification and/or claims by the current amendment. The attached page is captioned "**VERSIONS WITH MARKINGS TO SHOW CHANGES MADE**".

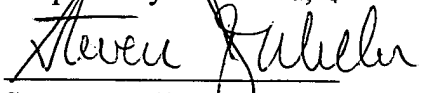
It is noted that the amendments are made only to more completely define the invention. No new matter has been added.

In view of the foregoing, Applicant submits that amended claims 1-11, 13, 14, 16-26, 28, and 29, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

Respectfully Submitted,

Date: January 21, 2006



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Date of Deposit: January 21, 2006

I hereby certify that this correspondence, including the attachments listed on the accompanying Transmittal, is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service on the date indicated above and is addressed to the Commissioner of Patents, Mail Stop Amendment, PO Box 1450, Arlington, VA 22313-1450.

Steven J. Miller, Esq. (PTO # 48368)
(Typed or printed name of person mailing paper or fee)

(Signature of person mailing paper or fee)

VERSION WITH MARKINGS TO SHOW CHANGES MADE

~~ABSTRACT OF THE DISCLOSURE~~ ABSTRACT

An apparatus for transferring torque magnetically with a primary rotary member and a secondary rotary member. The primary rotary member has permanent magnets ~~mounted circumferentially on a cylinder~~, the secondary rotary member ~~having a cylindrical geometry~~ with ~~electroconductive material arranged on its outer periphery and parallel to the axes of the rotary members~~ electro-conductive materials. The secondary rotary member also having magnetically permeable material. The secondary rotary member is placed partially or totally inside the primary rotating member. ~~The secondary rotary member's axial position relative to the primary rotating member can be varied by a suitable mechanical structure~~. This causes the two rotary members to axially overlap one another more or less as desired. Rotation of the primary rotary member causes rotation of the secondary rotary member, since magnetic flux lines emanating from the permanent magnets mounted on the primary rotating member, cut through all, or part of, the ~~electroconductive~~ electro-conductive material placed on the ~~periphery of the~~ secondary rotary member. This can vary the torque transmitted between the two rotary members, thereby enabling the varying of the rotational speed of the secondary rotary member relative to the primary rotary member.

BRIEF SUMMARY OF THE INVENTION

The present invention utilizes permanent magnets to transmit variable or fixed torque between two rotating elements. The aforesaid permanent magnets are located on only one of the two rotating elements (also referred to as "rotors" or "rotary members"), and the other rotating element in a particular embodiment does not contain permanent magnets, but does have

so-called "electro-conductive" elements. Said electro-conductive elements comprise materials and alloys that are not permanent magnets, but that allow electron flow through them. In addition, so-called "magnetically permeable" materials are also contained on the said rotors, said magnetically permeable materials comprising substances that allow magnetic flux penetration. The torque between the aforesaid two rotating elements is adjusted by mechanically varying the amount of magnetic flux passing between the elements by varying the extent to which the elements are axially overlapped. In a preferred embodiment of the apparatus, two concentric cylinders, one containing one or more rows of permanent magnets, is moved axially in order to progressively axially overlap a second cylindrical element containing ~~electrically conductive~~ electro-conductive elements and magnetically permeable ~~conductive~~ elements, but not containing permanent magnets. This progressive axial overlapping of the two cylinders allows variation in the amount of magnetic flux intersecting the two concentric cylinders. This causes the amount of induced electrical current in the cylinder containing the electro-conductive elements to vary, which then causes the induced counter magnetic forces to vary. The magnetic forces and, thus, torque transmitted will vary based on the amount of axial overlap.

The proposed invention overcomes previous limitations by taking advantage of new technologies in magnet materials and provides a stable means of mechanically varying large amounts of transmitted torque without the need for large external current controls.

~~DETAILED DESCRIPTION OF THE INVENTION~~

DETAILED DESCRIPTION OF THE PREFERRED AND ALTERNATE EMBODIEMNTS OF THE INVENTION

CLAIMS:

What is claimed is:

1. (Amended) An apparatus for transferring torque magnetically comprising:

a primary torque driving rotary member and a secondary driven rotary member;

the primary rotary member axially overlapping said secondary rotary member;

the secondary rotary member being surrounded by said primary member;

the primary rotary member, and not the secondary rotary member, having permanent magnets mounted on it;

the secondary rotary member having electro-conductive elements and magnetically permeable materials;

said secondary rotary member axially overlapped by said primary rotating member wherein a means for varying said primary rotary member's axial position relative to said secondary rotating member is provided; and

said primary rotating member being connected to and driven by a torque producing device and said secondary rotating member being connected to a torque utilizing device whereby rotation of the primary rotary member causes rotation of said secondary rotating member by some or all of the magnetic flux lines emanating from said permanent magnets mounted on said primary rotating member cutting through the electro-conductive material on said secondary rotary member thereby generating torque and rotation in said secondary

rotary member in relation to the percentage of the total area that said secondary rotary member is axially overlapped by said primary rotary member.

2. (Original) The apparatus according to claim 1 in which the primary rotary member's permanent magnets contain rare earth materials.

3. (Original) The apparatus according to claim 1 in which the primary rotary member's magnets are supported by a cylinder made of a ferrous material.

4. (Original) The apparatus according to claim 1 in which the primary rotary member's cylinder is constructed of built up thin pieces of ferrous material each electrically separated from one another by a suitable electrical insulating material.

5. (Amended) The apparatus according to claim 1 in which the secondary rotary member's electro-conductive material is made of aluminum and its alloys.

6. (Amended) The apparatus according to claim 1 in which the secondary rotary member's electro-conductive material is supported by laminated pieces of ferrous material each electrically separated from one another by a suitable electrical insulating material.

7. (Original) The apparatus according to claim 1 in which the primary and secondary rotary members being independently supported.

8. (Original) The apparatus according to claim 1 in which the primary rotary member's magnets axial position is adjusted by an automatic device.

9. (Amended) The apparatus according to claim 1 in which the secondary rotary member's electro-conductive material is made of copper and its alloys.

10. (Original) The apparatus according to claim 1 in which the primary rotary member's permanent magnets contain niodinium, iron and boron.

11. (Original) The apparatus according to claim 1 in which the primary rotary member's permanent magnets contain alnico, iron and ceramic materials.

12. (Cancelled) ~~The apparatus according to claim 1 in which the secondary rotary member's electro-conductive material is configured as a solid cylindrical ring geometry mounted on said secondary rotary member's outer cylindrical surface.~~

13. (Amended) The apparatus according to claim 1 in which the secondary rotary member's electro-conductive material is configured as a circumferential ladder geometry mounted on said secondary rotary member's outer cylindrical surface.

14. (Amended) The apparatus according to claim 13 in which the secondary rotary member's electro-conductive material's circumferential ladder geometry is divided into a plurality of electrically independent segmented arcs, mounted on said seondary rotary member's outer cylindrical surface.

15. (Cancelled) ~~The apparatus according to claims 13 or 14 further comprising electrically resistive materials being inserted into the electroconductive materials' electrical circuit.~~

16. (Amended) An apparatus for transferring torque magnetically comprising:

a primary torque driving rotary member and a secondary driven rotary member;

the primary rotary member axially overlapping said secondary rotary member;

the secondary rotary member being surrounded by said primary member;

the primary rotary member having electro-conductive elements and magnetically permeable materials;

the secondary rotary member, and not the primary rotary member, having permanent magnets mounted on it;

said secondary rotary member axially overlapped by said primary rotating member wherein a means for varying said primary rotary member's axial position relative to said secondary rotating member can be varied; and

said primary rotating member being connected to and driven by a torque producing device and said secondary rotating member being connected to a torque utilizing device whereby rotation of the primary rotary member causes rotation of said secondary rotating member by some or all of the magnetic flux lines emanating from said permanent magnets mounted on said primary rotating member cutting through the electro-conductive material on said secondary rotary member thereby generating torque and rotation in said secondary rotary member in relation to the percentage of the total area that said secondary rotary member is axially overlapped by said primary rotary member.

17. (Original) The apparatus according to claim 16 in which the secondary rotary member's permanent magnets' contain rare earth materials.

18. (Original) The apparatus according to claim 16 in which the secondary rotary member's magnets are supported by a cylinder made of a ferrous material.

19. (Original) The apparatus according to claim 16 in which the secondary rotary member's cylinder is constructed of built up thin pieces of ferrous material each electrically separated from one another by a suitable electrical insulating material.

20. (Amended) The apparatus according to claim 16 in which the primary rotary member's electro-conductive material is made of aluminum and its alloys.

21. (Amended) The apparatus according to claim 16 in which the primary rotary member's electro-conductive material is supported by laminated pieces of ferrous material each electrically separated from one another by a suitable electrical insulating material.

22. (Original) The apparatus according to claim 16 in which the primary and secondary rotary members being independently supported.

23. (Original) The apparatus according to claim 16 in which the secondary rotary member's magnets axial position is adjusted by an automatic device.

24. (Original) The apparatus according to claim 16 in which the secondary rotary member's permanent magnets contain niodinium, iron and boron.

25. (Original) The apparatus according to claim 16 in which the secondary rotary member's permanent magnets contain alnico, iron and ceramic materials.

26. (Amended) The apparatus according to claim 16 in which the primary rotary member's electro-conductive material is made of copper and its alloys.

27. (Cancelled) ~~The apparatus according to claim 16 in which the primary rotary member's electro-conductive material is configured as a solid cylindrical ring geometry mounted on said primary rotary member's inner cylindrical surface.~~

28. (Amended) The apparatus according to claim 16 in which the primary rotary member's electro-conductive material is configured as a ~~closed~~ circumferential ladder geometry mounted on said primary rotary member's inner cylindrical surface.

29. (Amended) The apparatus according to claim 28 in which the primary rotary member's electro-conductive material's circumferential ladder geometry is divided into a plurality of electrically independent segmented arcs, mounted on said primary rotary member's inner cylindrical surface.

30. (Cancelled) ~~The apparatus according to claims 28 or 29 further comprising electrically resistive materials being inserted into the electroconductive materials' electrical circuit.~~